

## Supply Air Nozzles

### SAP-Z

#### Introduction

Waterloo SAP-Z supply nozzles are capable of delivering air to spaces where long distance penetration and low noise levels are required. Suitable for cold and warm air supply applications, these versatile adjustable units are ideal for providing focussed ventilation or where precision is required. When grouped, penetration can be considerably enhanced.

SAP-Z supply nozzles are made of pressed and spun aluminium, painted RAL 9010 20% gloss as standard although other colours are available upon request. Available in 7 sizes to suit standard duct dimensions. SAP-Z's are manually adjusted to their chosen position, although a motorised option is available. Adjustment of up to 30° from the major axis is possible.

#### Product Description

**SAP-Z** Supply Air Nozzle

**B1** Belimo LM24 motor, 24v - 2 position or continuous

**B2** Belimo LM230 motor, 230v - 2 position or continuous

#### Features

- 360° directional adjustment
- Excellent throw penetration
- High capacity
- Low noise levels
- Motorised version available

#### Finishes

PPM 9010 as standard

Other colours available on request

#### Selection Criteria

Temperature differential – 0 C (Isothermal)

Terminal velocity – 0.25 m/s

Noise level is sound power ( $L_w$ ) in dBA less room absorption of 8 dB

#### Selection Example

SAP-Z /P/-/100

Airflow Rate = 15 l/s

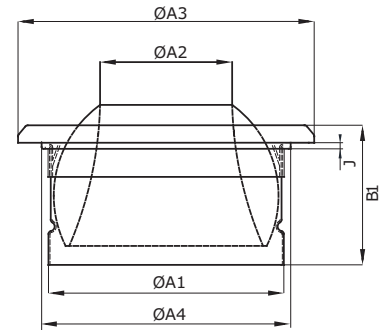
Temperature differential = -5° C

Throw = 14 m

Noise level = <20 dBA

Pressure Loss = 75 Pa

Fall = 4 m



SAP-Z

Thermal effects resulting in rise and fall of plume	
$\Delta t = -10$	See Performance Table
$\Delta t = -5$	See Performance Table
$\Delta t = 0$	See Performance Table
$\Delta t = +5$	See Performance Table
$\Delta t = +10$	See Performance Table

#### Dimensions

Dimensions	ØA1	ØA2	ØA3	ØA4	J	B1
100	98	50	135	98	2	79
125	123	64	169	123	0	89
160	148	72	196	162	5	118
200	199	108	255	215	5	138
250	248	136	300	260	8	178
315	313	174	384	325	10	195
400	398	230	462	408	10	214

Angle of discharge effect on rise and fall of plume	
Angle of Discharge	Throw Multiplier
+10	1.08
+20	1.21
+30	1.35

#### ORDER EXAMPLE

SAP-Z/125/B1/2-Pos/PPM9010

Type \_\_\_\_\_

Nominal size \_\_\_\_\_

Motor Type (if required) \_\_\_\_\_

Motor Option \_\_\_\_\_

Finish \_\_\_\_\_

#### Performance Table

SAP-Z	Flow Rate	Throw	Pressure Loss	$L_w$	Rise/Fall $\Delta t = 0$	Rise/Fall $\Delta t = \pm 5$	Rise/Fall $\Delta t = \pm 10$
Size	l/s	m	Pa	dBA	m	m	m
100	10	9	35	<20	0.4	2.5	4.8
	15	14	75	<20	0.8	4	8.5
	20	19	150	20	1.2	6	-
125	15	9	12	<20	0.7	3.9	7
	20	11	23	<20	0.9	4	7.2
	30	17	50	20	1.2	4.3	8.5
160	50	29	150	35	2.4	5.2	-
	20	9	8	<20	1.1	3.8	-
	30	13	20	<20	1.4	5.8	-
200	50	22	52	24	2.5	8.2	-
	70	30	100	34	3	-	-
	30	10	5	<20	1.3	3.4	-
250	50	17	18	<20	1.8	4.1	-
	70	23	33	21	2.9	6.8	-
	100	31	80	32	3.5	-	-
315	50	13	7	<20	2.5	4.2	-
	70	18	14	<20	3	5.8	-
	100	25	30	21	4	-	-
400	150	33	70	32	5.8	-	-
	70	15	<5	<20	3.6	4.4	-
	100	21	10	<20	4.8	5.6	-
400	150	30	28	20	6	-	-
	70	12	<5	<20	4	5	-
	100	17	8	<20	6.4	7.4	-
400	150	24	15	<20	8.2	-	-
	200	32	30	25	9.8	-	-

Table content for terminal velocity of 0.25 m/s